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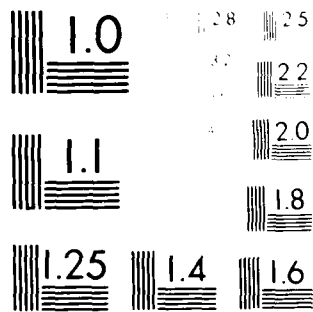
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16. Abstract  The report includes an analysis of the current threat against civil aviation along with information regarding hijacking attempts, security incidents, bomb threats, and passenger screening activity. It also summarizes ongoing activities to assure adequate protection of civil air commerce against hijacking/sabotage and related crimes, and other aspects of the Civil Aviation Security Program.			
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**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

WASHINGTON, D.C. 20591

May 22, 1980

The Honorable Walter F. Mondale  
President of the Senate  
Washington, D.C. 20510



OFFICE OF  
THE ADMINISTRATOR

Dear Mr. President:

Enclosed is the Federal Aviation Administration's Semiannual Report on the Effectiveness of the Civil Aviation Security Program. It covers the period July 1 to December 31, 1979, and is submitted in accordance with Section 315(a) of the Federal Aviation Act.

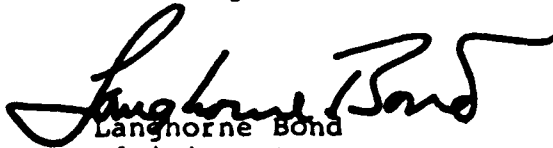
Strengthened security measures to prevent or deter airline hijackings and related criminal acts have now been in effect for 7 years. Their success is demonstrated by the fact that the number of air carrier hijackings over the past 7 years has averaged 5 while for the 5 years preceding 1973 the yearly average was 27.

However, during this reporting period there were 5 U.S. airline hijackings bringing the 1979 total to 11--more than in any year since the peak hijacking years of 1968-1972. Until January of this year, none of the 36 U.S. air carrier hijackings since 1972 were caused by real firearms or high explosives penetrating the passenger screening system. Unfortunately, on January 25, 1980, a man armed with a small pistol successfully hijacked a U.S. air carrier aircraft to Cuba. Although the exact method used to get the weapon aboard has not yet been determined, this hijacking confirms that while the screening system is highly effective, it is not infallible. Continuous government and airline efforts are required to maintain effective levels of vigilance and performance at all passenger screening stations.

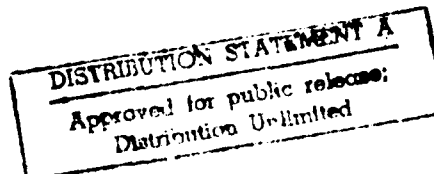
Recognizing the fallibility of the screening system, companion efforts have been taken to update crewmember antihijack training to better equip crews to respond when an incident occurs and at the same time to develop a universal game plan to be followed by all crewmembers, airlines, airports and the Federal Government in managing hijackings to a safe conclusion.

A report has also been sent to the Speaker of the House of Representatives.

Sincerely,

  
Langhorne Bond  
Administrator

Enclosure



DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

WASHINGTON, D.C. 20591

May 22, 1980



OFFICE OF  
THE ADMINISTRATOR

The Honorable Thomas P. O'Neill, Jr.  
Speaker of the House of Representatives  
Washington, D.C. 20515

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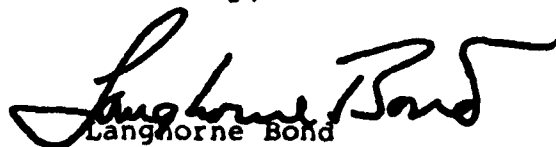
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Enclosure



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## I. EXECUTIVE HIGHLIGHTS

- THIS REPORT COVERS THE PERIOD JULY-DECEMBER 1979.
- WORLDWIDE, 13 SCHEDULED AIR CARRIER HIJACKINGS OCCURRED (7 SUCCESSFUL). 5 AGAINST U.S. AIRCRAFT (2 SUCCESSFUL).
- THE 11 HIJACKINGS OF U.S. AIR CARRIER AIRCRAFT IN 1979 ARE THE MOST FOR ANY YEAR SINCE STRENGTHENED SECURITY MEASURES WERE INITIATED IN 1973.
- 2 U.S. GENERAL AVIATION AIRCRAFT SUCCESSFULLY HIJACKED.
- NONE OF THE 36 U.S. AIR CARRIER HIJACKINGS FROM JANUARY 1973 THROUGH 1979 WERE THE RESULT OF REAL FIREARMS OR HIGH EXPLOSIVE DEVICES PENETRATING THE SCREENING SYSTEM.
- 724 BOMB THREATS AGAINST AIRCRAFT AND AIRPORTS.
- VULNERABILITY OF CIVIL AVIATION TO TERRORIST ACTION CONTINUED. AREAS OF GREATEST DANGER ARE EUROPE, THE MIDDLE EAST AND CENTRAL AMERICA. IN THE U.S., ANTI-CASTRO, SERBIAN AND CROATIAN GROUPS MOST ACTIVE IN CONDUCTING CRIMINAL ACTS AGAINST CIVIL AVIATION.
- SIGNIFICANT CRIMINAL ACTS AGAINST CIVIL AVIATION WORLDWIDE INCLUDED 15 HIJACKINGS, 25 EXPLOSIONS, 7 EXPLOSIVE DEVICES DISCOVERED.
- 306 MILLION PERSONS PROCESSED THROUGH U.S. PASSENGER CHECK-POINTS. 1171 FIREARMS DETECTED. 591 RELATED ARRESTS.

- U.S. SECURITY REQUIREMENTS COVER 183 U.S. AND FOREIGN AIRLINES OPERATING 15,000 FLIGHTS DAILY FROM 680 U.S. AND FOREIGN AIRPORTS.
  
- PRINCIPAL GOVERNMENT/INDUSTRY ACTIONS DURING THE REPORTING PERIOD TO PREVENT OR DETER CRIMINAL ACTS AGAINST CIVIL AVIATION INCLUDED:
  - FULL IMPLEMENTATION OF REVISED FAR PART 107 REGARDING AVIATION SECURITY.
  
  - CONTINUED TRAINING OF LAW ENFORCEMENT OFFICERS SUPPORTING AIRPORT SECURITY ACTIVITIES.
  
  - SECURITY PROGRAMS IMPLEMENTED BY AIR FREIGHT FORWARDERS AND THE U.S. POSTAL SERVICE.
  
  - GOVERNMENT/INDUSTRY SEMINAR CONDUCTED TO IMPROVE INCIDENT MANAGEMENT.
  
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  - RESEARCH AND DEVELOPMENT PROJECTS TO IMPROVE EXPLOSIVE DETECTION CAPABILITIES MEETING SCHEDULED PHASE COMPLETIONS AS NECESSARY.
  
- 344 INVESTIGATIONS COMPLETED INVOLVING ALLEGED VIOLATIONS BY U.S. AND FOREIGN AIR CARRIERS AND AIRPORTS OF FARs RELATING TO SECURITY. 23 RESULTED IN CIVIL PENALTIES TOTALING \$15,200.

## II. INTRODUCTION

This is the 11th Semiannual Report to Congress on the Effectiveness of the U.S. Civil Aviation Security Program. It covers the period July 1 - December 31, 1979, and is submitted in accordance with Section 315(a) of the Federal Aviation Act.

## III. U.S. AIRCRAFT HIJACKINGS

During this reporting period hijackings of U.S. aircraft continued at the high rate experienced during the last half of 1978 and the first half of 1979. Five scheduled air carrier aircraft and 2 general aviation aircraft hijackings occurred between July 1 and December 31, 1979, making the yearly totals 11 and 2 respectively.

The 11 air carrier hijackings in 1979 are more than in any year since U.S. civil aviation security requirements went into effect in January 1973. Two of the five air carrier hijackings in the last half of 1979 were successful bringing the number of successful hijackings of air carrier aircraft in 1979 to four or 36% of the year's total. Both of the general aviation hijackings were considered successful.

Of the 36 U.S. scheduled air carrier hijacking attempts from January 1973 through 1979, none were the result of real firearms or high explosive devices passing undetected through the passenger screening system. In 11 of these 36 cases, the hijackers either forced their way aboard or in some other fashion avoided the normal passenger boarding process. In 18 of the remaining 25 incidents, the hijackers, although claiming to have a deadly or dangerous weapon or high explosives, in reality had no weapons.

The following is a summary of each of the five U.S. scheduled air carrier aircraft hijackings which occurred during this reporting period:

(See Exhibits 1 & 2)

- o July 20 - While a United Air Lines B-727 aircraft was en route from Denver to Omaha, a man claiming he had plastic explosives demanded to go to Cuba. The aircraft landed at Omaha and the passengers and flight attendants were allowed to deplane. During the course of negotiations FBI agents overpowered the hijacker. He did not have any explosives or other weapons. The man was charged with aircraft piracy but was found not guilty by reason of insanity at the time of the incident and underwent further mental evaluation.

- o August 16 - Shortly after an Eastern Air Lines B-727 aircraft took off from Guatemala City, Guatemala, en route to Miami, a man claiming he had a bomb concealed in a radio and threatening a flight attendant with a pen knife demanded to go to Cuba and from there to Russia. Subsequently, the hijacker was overpowered and subdued by the crew with the assistance of several passengers. The flight then continued to Miami where the hijacker was taken into custody. He did not have a bomb, his only weapon being a small pen knife. The man was charged with aircraft piracy.
- o August 22 - A United Air Lines B-727 aircraft was hijacked while en route from Portland to Los Angeles by a man claiming he had a bomb in his briefcase. He demanded that the aircraft return to Portland. The aircraft was allowed to land at San Francisco to refuel and then proceeded to Portland. After some negotiation, the passengers and flight attendants were released. Further negotiation resulted in the hijacker's surrender and he was taken into custody. He did not have any explosives or other weapons. He has been charged with aircraft piracy.
- o October 30 - A Pacific Southwest Airlines B-727 aircraft was hijacked while en route from Los Angeles to San Diego when a man told a flight attendant that he had a plastic bomb and demanded to be flown to Mexico City. When the flight landed at Tijuana, Mexico, for refueling the hijacker deplaned and was taken into custody by Mexican authorities. He had no bomb or other weapon. On November 1, 1979, the hijacker was deported to the United States and has been charged with aircraft piracy.
- o November 12 - An American Airlines B-727 aircraft, during a scheduled stop at El Paso, was hijacked by a man who held a flight attendant at knifepoint and demanded to be flown to Iran. The hijacker also claimed to have dynamite in a satchel and on his person. After several hours he was taken into custody by FBI agents. A search of the hijacker and the aircraft revealed no explosives and no weapons other than a hunting knife. He has been charged with unlawful interference with a crewmember.

The following are summaries of the two general aviation hijackings which occurred during this reporting period:

(See Exhibit 3)

- o October 16 - A woman armed with a pistol and accompanied by her son, age 10, hijacked a Piper Cherokee aircraft at Pierce Field, Lower Lake, California. Over Napa the hijacker told the pilot to land and the woman and her son deplaned. She was apprehended while still on the airport and has been charged with assault with a deadly weapon and kidnapping.
- o December 12 - A man hijacked a Cessna Model 172 operated by the Island City Flying Service, Key West, Florida, while on an extended picture-taking and sightseeing tour of the Key West area. Shortly after takeoff the man pointed a small handgun at the pilot and told him to fly to Cuba. Upon landing in Havana the hijacker was taken into custody by Cuban authorities. Later in the day the pilot was allowed to fly the aircraft back to Key West. Neither the identity of the hijacker nor his status in Cuba are yet known.

In addition to recording the number of actual hijackings, the Federal Aviation Administration (FAA) has attempted to identify and record those incidents in which it appeared that an individual intended to commit a crime against aviation but was prevented from doing so by the security procedures in effect. One incident of this kind occurred during this period, raising the total number of hijackings or related crimes believed prevented to 80 since 1973. The incident is summarized below:

(See Exhibit 4)

- o November 25 - X-ray inspection revealed the outline of a handgun in a passenger's handbag. The male passenger denied the presence of a gun. However, physical inspection disclosed a .25 caliber pistol concealed in a box designed to hold hair coloring. Ammunition for the gun was discovered in a thermos bottle and in the battery compartment of a portable radio. The man was arrested and charged with carrying a concealed firearm. He was found guilty, placed on 2 years probation and deported to Mexico as an illegal alien.

#### IV. FOREIGN HIJACKINGS

During 1979 there were 14 foreign aircraft hijackings (12 air carrier and 2 general aviation). Eight occurred during this reporting period, all against scheduled air carriers. Five were successful and in six of the eight the hijackers possessed real weapons. Additionally, in five of the eight air carrier hijackings weapons were introduced through the normal passenger boarding process and would have been intercepted by effective passenger and carry-on baggage screening procedures.

(See Exhibit 2)

## V. AIRCRAFT/AIRPORT SABOTAGE

There were seven significant incidents involving actual or suspect explosive devices during this period. Five involved either real or hoax devices found at airports or aboard aircraft and one involved a low order bomb at an airport which exploded and injured one person. The seventh involved an explosion aboard an in-flight aircraft and is summarized below:

- o November 15 - A bomb exploded aboard an American Airlines flight from Chicago's O'Hare International Airport to Washington's National Airport. The explosion caused a fire in the cargo hold of the B-727 and smoke in the passenger compartment. The flight diverted to Dulles International Airport where it landed safely and all passengers and crew deplaned. The explosive device consisted of low order explosives detonated by a barometric timing device. It was in a parcel mailed in the Chicago area addressed to a Washington, D.C., address. There were no injuries and only minor smoke and fire damage to the aircraft cargo compartment. Several anonymous telephone calls were received indicating that various Iranian student groups were responsible for the bombing. Investigation is continuing.

## VI. BOMB THREATS

Threats involving the use of explosives against aircraft and airports increased slightly during this reporting period totaling 724 as compared to 706 during the first half of 1979. Twenty-five persons were arrested for making bomb threats against aircraft or airports during the July-December 1979 period. The 1,430 threats received against aircraft and airports in 1979 are an approximate 6% increase over the 1,350 received in 1978.

There were 566 bomb threats made against aircraft. Of these, 342 were considered serious as defined in Exhibit 5. Of the serious threats, 296 or almost 87% were received by telephone. The remaining 46 were made verbally at screening checkpoints or other locations or were made visually or in writing. These serious threats against aircraft caused at least 254 searches and 183 flight delays or diversions, all of which resulted in some disruption of airline operations and inconvenience to passengers. The serious threats involved 26 U.S. air carriers and 31 foreign air carriers. Seven of the threats were accompanied by extortion demands.

Since almost all bomb threats against airports are received under circumstances which make an evaluation as to serious or nonserious impractical, no attempt was made to make a distinction

of this nature. There were 158 bomb threats received against airports this reporting period. These threats resulted in 134 searches, 21 evacuations of airport facilities and at least 8 flight delays. Seven were accompanied by extortion demands.

(See Exhibits 5, 6 & 7)

## VII. CURRENT THREAT ESTIMATE

Aircraft hijackings and sabotage continue to threaten the lives and property of persons traveling in civil air transportation. The high level of worldwide hijackings and aviation-related sabotage incidents continued during this reporting period indicating that effective civil aviation security measures remain necessary.

Civil aviation continues to be an attractive and dramatic target worldwide for individuals and organizations attempting to further their political goals. This is evidenced by an increase in the number of criminal acts committed against civil aviation.

Acts of terrorism continued to pose a threat to civil aviation throughout the world with the greatest danger remaining in Europe, the Middle East and Central America. The terrorist groups in these areas continued to improve their coordination and cooperation with each other, thus enhancing their potential for terrorist acts against international targets.

Successful paramilitary security operations continued to curtail terrorist activity in South America. Many leaders that have been forced to flee remain exiled in Europe. In the Far East, terrorist violence continued at a low level except for militant/criminal acts and demonstrations against Narita Airport in Japan.

In the United States, anti-Castro groups and Puerto Rican Nationalists continued their criminal attacks and threats. The level of activity by anti-Castro groups appeared to have increased somewhat during the reporting period. Bomb threats from anti-Castro groups forced Cubana Airlines to shift departure of charter flights from Newark Airport to John F. Kennedy International Airport during December 1979 in an unsuccessful attempt to initiate service between Havana, Cuba, and the New York metropolitan area. In addition, members of anti-Castro groups have reportedly expressed the opinion that the presence of Cubana Airlines in the United States is an insult and have expressed intentions to take violent retaliatory action.

Other groups capable of terrorist acts in the United States are the Puerto Rican pro-independence extremists; i.e., the Armed Forces of National Liberation (FALN), and other similar groups. Over the years, these groups have claimed responsibility for bombings in New York, Chicago, and various locations in Puerto Rico. Reportedly, several of these smaller pro-independence extremist groups have joined forces.

Recently, three groups claimed joint responsibility for a machinegun attack against a U.S. Navy bus in Puerto Rico. Two U.S. Navy personnel were killed and 10 others were wounded in the incident. Three persons, allegedly members of an anti-Castro group, have been charged with a bombing of a Bar Association building in Puerto Rico and for conspiring to bomb a U.S. commuter air carrier aircraft owned by Vieques Air Link, Puerto Rico, in retaliation for the attack against the U.S. Navy bus.

Croatian and Serbian groups in the United States continue to be of concern. These groups have participated in terrorist bombings, killings, extortions, airline hijackings and, more recently, hijack and sabotage threats against U.S. and Yugoslavian airlines. Two hijackings have been perpetrated by members of these groups.

The worldwide increase in hijackings noted during the past few years continued at a comparably high level during this 6-month period. There were a total of 13 scheduled air carrier hijackings during the period, 7 of which were successful. In comparison, 10 scheduled air carrier hijackings occurred during the first 6 months of 1979, 3 of which were successful.

While the threat of hijacking persists, acts of sabotage and other criminal acts continue to pose a serious and increasing threat to civil aviation. A total of 49 criminal acts occurred during the reporting period which resulted in 1 death and 27 injuries. This is a significant increase over the 36 criminal acts which occurred during the first half of 1979, resulting in 60 deaths and 53 injuries. Fifteen of the 49 incidents during the last half of 1979 were hijackings (13 air carriers and 2 general aviation); 25 were explosions (4 at airports, 1 aboard aircraft, and 20 at airline offices); 7 incidents involved explosive devices discovered (5 at airports, 1 aboard an air carrier and 1 at an airline office); and 2 other criminal acts against civil aviation (arson and hostage-taking). One of the explosion incidents which occurred at a U.S. airport resulted in an individual being seriously injured.

Since 1974 worldwide criminal acts against civil aviation have resulted in 757 deaths and 716 injuries, with 116 deaths and 121 injuries involving U.S. civil aviation.

(See Exhibits 2, 7 & 8)

#### VIII. PASSENGER SCREENING

During the 7 years since the institution of 100% air carrier passenger screening there have been 36 hijackings of U.S. air carrier aircraft, an average of approximately 5 per year. This



compares very favorably with the total of 134 or average of approximately 27 for the 5 years immediately preceding the strengthening of passenger screening procedures in 1973. Since the full implementation of passenger screening procedures in 1973, over 2.5 billion persons have been screened and almost 4 billion pieces of carry-on items inspected for more than 36 million flights. Additionally, during this period, over 19,000 firearms have been detected resulting in over 7,000 related arrests.

(See Exhibits 1 & 9)

During this reporting period more than 306 million persons were processed through screening checkpoints at the nation's 410 airports where passenger screening is conducted. A total of 1,171 firearms were detected during this period. This is approximately 12% higher than the average of 1,042 firearms detected during past six reporting periods. One thousand sixty-seven (91%) of the 1,171 firearms detected were discovered through x-ray inspection of carry-on items, 70 (6%) by weapons detector screening of individuals, and 34 (3%) by physical search.

Five hundred and ninety-one firearms arrests occurred during the July-December 1979 period. This represents a 26% increase over the 469 arrests which occurred during the first half of 1979 and a 28% increase over the average of 461 arrests for all reporting periods following 1976. The 591 arrests involved some 24 U.S. airlines at 88 U.S. airports. Twenty-four large hub airports (e.g., Los Angeles and Chicago) accounted for 329 (56%) of the arrests. Twenty-nine medium hub airports (e.g., Memphis and Albany) accounted for 142 (24%). The remaining 120 arrests or 20% of the total occurred at 35 small and non-hub airports (e.g., Eugene and Lubbock). In 180 (30%) of the 591 arrests the individuals involved were fined, placed in confinement and/or placed on probation. Charges were dropped or dismissed in 111 (19%) of the cases and action in the remaining 300 (51%) was still pending. Of the 291 cases which have been settled, 62% (the 180 cases cited above) have resulted in fines, confinement or other disciplinary action.

(See Exhibit 10)

Screening checkpoint equipment consists primarily of walk-through weapon detectors for individuals and, at high volume stations, x-ray inspection systems for carry-on items. Walk-through weapon detectors currently in use total 1,311 and x-ray baggage inspection systems number 687. In addition, 1,200 hand-held devices are in place to back up the walk-through weapon detectors.

(See Exhibits 11 & 12)

## IX. CIVIL AVIATION SECURITY ACTIONS

Passenger screening and other security measures in effect continue to provide increased safety for airline passengers and crews as well as security for aircraft and airports. These measures currently involve 183 U.S. and foreign airline companies operating almost 15,000 flights each day to and from about 680 U.S. and foreign airports. In this regard over 1.7 million persons with over 1.4 million pieces of carry-on items were screened daily.

(See Exhibit 13)

The success of the U.S. Civil Aviation Security Program in a large measure can be attributed to the cooperative and mutually supportive efforts of all concerned--airlines, airports, local communities, air travelers and the Federal Government. During this reporting period major activities were initiated to bring about further improvements in the system and to foster continued cooperation by all concerned.

(See Exhibit 14)

Airport Security - Ongoing activities which contributed significantly to airport security included full implementation of the revised Federal Aviation Regulations (FAR) Part 107 governing airport security, training of law enforcement officers supporting airport security programs, and the explosive detection K-9 team program. The following is a summary of these actions and programs:

- o FAR Part 107 - This is the first reporting period in which the revised regulation has been in effect for the entire period. A major change resulting from the revision to the regulation was a prohibition against the unauthorized carriage of firearms, explosives or incendiary devices by persons in or entering airport sterile areas or presenting themselves for inspection at established screening checkpoints. In the 6 months covered by this report, there were 876 investigations initiated concerning alleged violations of this portion of the regulation. From the time this prohibition came into effect (March 29, 1979) through December 1979, there have been 1,026 investigations initiated of which 677 have been completed. Review of completed investigations indicates that of the individuals involved approximately 52% were male and 48% female. Further, approximately 59% were ticketed passengers, 39% were nonpassengers, and in 3% of the cases, the status was not established. Additionally, 61% of the individuals had a loaded firearm, in 30% of the cases the firearms were unloaded, and in 9% of the cases the status was not established.

Another significant change resulting from the revised regulation was a provision permitting, in certain instances, law enforcement officers supporting the screening system to patrol in the public areas of terminals as opposed to being stationed at the screening checkpoints. As of December 31, 1979, approval has been granted under this provision for selected areas at 13 airports which have submitted amendments to their security programs.

- o Civil Aviation Security Training School - This school is designed primarily for local law enforcement officers assigned to support airline and airport security programs. Attendance of local officers at the 8-day course at the Transportation Safety Institute in Oklahoma City, Oklahoma, is funded by the Law Enforcement Assistance Administration (LEAA). The course provides indepth coverage of civil aviation security requirements, procedures and techniques. As of December 1979, 96 classes have been conducted for 2,259 students, including 1,613 local police officers, 305 foreign students, 273 FAA employees, 37 representatives of other U.S. Government agencies and 26 aviation industry officials. In addition to the formal classes at Oklahoma City, special 2-day seminars, attended by 1,889 persons, have been conducted at 25 airports located at key cities across the nation.
- o Explosive Detection Dog Teams - The FAA, in cooperation with the LEAA, has sponsored a program to strategically locate U.S. Air Force trained explosive detection K-9 teams in key cities near major airports. One dog and a handler constitute a team. The teams are positioned so that this emergency support will be readily available to threatened aircraft flying over the United States within 1/2-hour flight time. Currently, 29 airports can provide this emergency K-9 explosive detection support. To date, in actual explosive detection missions, the teams have detected 26 explosive items in the course of 3,956 aircraft and airport searches. In addition, they have conducted 4,644 explosive searches in their local communities, detecting 144 additional explosive items.

On an annual basis, the teams receive training proficiency evaluations conducted by the U.S. Air Force. These evaluations conducted by the U.S. Air Force have established that K-9 teams perform at 98% explosive detection surety rate with a false alert rate of 4%.

(See Exhibit 15)

Aircraft Security - During this reporting period significant actions regarding the security of aircraft included new security requirements for indirect air carriers and the U.S. Postal Service; the conduct of a government/industry seminar on incident management; a proposed change in regulations to place security requirements on commuter air carriers and to make aircraft security requirements more uniform; an enhancement of government/industry interest in the human factors involved in passenger screening; and the development of a training program for operators of x-ray systems. The following is a summary of these actions:

- o Indirect Air Carrier Security and Memorandum of Agreement Between the FAA and the U.S. Postal Service - The November 15, 1979, detonation of an explosive device in parcel mail aboard an air carrier highlighted the necessity for enhancement of security procedures for handling parcel freight destined for carriage in air transportation. Working as a team the FAA, air industry representatives, and the U.S. Postal Service (USPS) developed security programs to be implemented by the USPS and indirect air carriers (air freight forwarders). The security programs in use by air carriers also were strengthened with regard to the acceptance of package cargo to assure uniformity throughout the air transportation system. To assist in accomplishing the security objective, the FAA and USPS entered into a Memorandum of Agreement for the purpose of enhancing safety in air transportation by the coordination of air parcel security programs. As a further result of these efforts, a new Part 109 was added to the FARs which requires all indirect air carriers to submit and carry out a security program designed to prevent or deter the unauthorized introduction of any explosive or incendiary device into any package cargo intended for carriage by air.
- o Incident Management Seminar - The FAA and the FBI jointly hosted an incident management seminar for Chief Executives and Operations and Security Officers of the major airlines. The purpose of the seminar was to present a common strategy for managing aircraft hijacking incidents and emphasized the continuing need for a high level of cooperation between concerned parties to assure the safe conclusion of such incidents. A new slide/tape training program covering flight crew defensive tactics against hijackers was previewed at the seminar prior to distribution to air carriers.
- o Air Taxi/Commercial Operator (Commuter Air Carriers) Security - A proposed new FAR Part 108 was developed and published in the Federal Register. This new Part proposes to extend appropriate security measures now applicable to domestic air carriers to certain air taxi/commercial operators, and to small aircraft operations conducted by U.S. and foreign air carriers.

The decision to propose security requirements for commuter air carriers was necessary since the Civil Aeronautics Board now allows commuters to use aircraft seating up to 60 passengers. These larger aircraft have the capacity, performance capabilities, and range which make them attractive to hijackers. Additionally, the Airline Deregulation Act of 1978 includes a requirement that passengers engaging in air transportation on commuter carriers be afforded a level of safety equivalent to that provided by the certificated carriers wherever feasible.

The Notice of Proposed Rule Making was issued to provide an opportunity for all interested parties to express their opinions. Comments received will be reviewed and considered during the decisionmaking process. All available relevant information will be collected and analyzed to fully illuminate the potential impact of the proposed rule.

- o Human Factors and Passenger Screening System Improvements - No matter how advanced the state-of-the-art in security system technology becomes, the human factors involved will remain the single most important aspect of the passenger screening system. A failure of the individual screeners to fully accomplish all aspects of their functions will cause a breakdown in the effectiveness of the overall security system. FAA and the aviation industry recognize that a continuing effort must be made to improve upon the human factors identified in a recently accomplished study as mentioned in the last Report to Congress. The FAA-developed screening station checklist was distributed and is continually being updated to facilitate improved operations by screening personnel. The aviation industry has recognized that screening personnel positions are important security and public relations functions. The heightened interest of industry in improving human factors has stimulated an effort in the private sector to recognize and effectively deal with the major factors of motivation, training, selection and working environment relating to screening personnel.
- o Explosive Device Training - X-Ray Operator - A tape/slide program has been developed for use by air carrier personnel to train personnel who operate the x-ray baggage inspection systems at screening checkpoints. The purpose of this program is to show the operators typical dangerous articles--explosives, grenades and guns--as they appear on the television monitor when passed through the x-ray system.

Research and Development - The following is the current status of ongoing research and development efforts which evidenced significant changes during this reporting period:

- o X-Ray Absorption - This concept is based on an automatic computer based analysis of the size, shape and x-ray density of checked baggage contents. An operational test of this system at Newark International Airport demonstrated sufficient detection capabilities to warrant further development. As a result, the two existing systems are being modified for operational use. It is planned to have one system installed at Dulles International Airport in the spring of 1980 for a 1-year operational evaluation. At the same time, the second system will be used to test advanced computer programming techniques to enhance performance.
- o Nuclear Magnetic Resonance - This system relies on the detection of a characteristic response of explosive molecules when they are subjected to magnetic pulse and radio frequency fields. After a scale model of the system was constructed and the feasibility of this concept was demonstrated, an airport evaluation to gather research and development data and to determine operating characteristics was conducted in the spring of 1979. Analysis of this data shows promise and additional airport evaluations are scheduled for early summer 1980.
- o Thermal Neutron Activation - The technical feasibility of this concept, the identification of explosives by means of a reaction which is unique to specific explosive materials has been demonstrated. A current contract calls for the design and construction of a portable system which can be tested at different airports. Testing will be conducted at various airports during the spring and summer of 1980.
- o Use of Small Animals to Detect Explosives - A 2-year contract was awarded to the Veterans Administration, Philadelphia Medical Research Wing, to determine the potential of small animals (e.g., gerbils, rats) in detecting explosives. Laboratory equipment is currently in place and testing of animals will commence shortly.

(See Exhibit 16)

International Activities - Recognizing the need for all nations whose aircraft engage in air commerce to develop and implement effective aviation security measures, the U.S. Government has

continued its efforts in this regard. Most nations and airlines of the world now have ongoing civil aviation security programs and have in varying degrees expended significant effort in bringing about improvements in their programs.

The following are some of the important efforts made during this reporting period to promote international civil aviation security:

- o Bonn Declaration on Hijacking - In July 1978, at an Economic Summit Conference held in Bonn, Germany, President Carter and the Heads of State of six other participating nations issued a Declaration of their commitment to intensify joint efforts to combat terrorism. The Declaration announced that where a country refuses extradition or prosecution of those who have hijacked an aircraft and/or do not return the aircraft, the seven nations would take immediate action to cease all flights to that country. At the same time they would initiate action to halt all incoming flights from that country or from any country by airlines of the country concerned. Ten carrier hijackings (3 U.S.) plus 2 general aviation hijackings (1 U.S.) have occurred during 1979 which are considered to be within the framework of the Bonn Declaration. These hijackings plus 3 carrier hijackings (1 U.S.) which occurred in 1978 bring the number of hijackings under the purview of the Bonn Declaration to a total of 15. In 7 (3 U.S.) of these 15 incidents the hijackers have been either prosecuted or extradited.
- o International Civil Aviation Organization (ICAO) - In November 1979 an FAA representative participated in ICAO's first South American Regional Security Seminar. Participants from eight countries and three international organizations attended the meeting. International Regional Seminars of this type have contributed significantly to the enhancement of civil aviation security and have improved the regional cooperation between countries.
- o Foreign Technical Assistance - The FAA on a continuing basis conducts a bilateral program of technical assistance and exchange of information on a government to government basis. Upon request, professional security teams have visited foreign nations and conducted evaluations of existing security systems, provided training in security procedures, and provided assistance in assessment of technical security needs. Further assistance is tendered through indepth briefings of foreign officials and through training programs offered at the Transportation Safety Institute, and the distribution of technical training aids and analytical studies.

(See Exhibit 17)

#### X. COMPLIANCE AND ENFORCEMENT

The FAA is responsible for ensuring compliance by airlines, airports and individuals with the pertinent FARs. Generally, compliance is achieved through cooperation among all concerned with education and counseling playing an important role in preventing violations of the FARs before they occur. However, when an allegation is received that a violation of the FARs has occurred, an investigation is initiated immediately. If the results of the investigation indicate a lack of compliance, administrative or legal action may be necessary. Actions taken for violations of FARs pertaining to security take the form of Warnings, Letters of Correction or the assessment of civil penalties.

During the reporting period, 344 investigations were completed involving alleged violations of regulations relating to security by U.S. and foreign air carriers and U.S. airports. In 23 of these cases, civil penalties totaling \$15,200 were imposed; in 287 cases, administrative corrective action (including 201 Warnings) was taken; and in 34 cases, the alleged violation was not substantiated. Comparable figures covering all of 1979 are contained in Exhibit 18.

As previously noted, FAR Part 107 - Airport Security, was amended in March 1979 to include a provision prohibiting the unauthorized carriage of firearms, explosives or incendiary devices through passenger screening checkpoints by individuals. Through December 1979, as a result of this regulation, 677 investigations of alleged violations of this FAR were completed resulting in 35 civil penalties, totaling \$4,650, and 572 administrative correction actions. In 70 cases the alleged violations were not substantiated.

By FAR Section 121.585, an individual is prohibited from having a deadly or dangerous weapon accessible to him aboard an aircraft. This FAR also prohibits the carriage of a loaded firearm in checked baggage or an unloaded firearm in checked baggage except when specified conditions are met. During 1979, 97 investigations of alleged violations of this regulation were completed and resulted in 35 civil penalties, totaling \$6,650, and 45 administrative corrective actions. In 17 cases, the alleged violation was not substantiated.

(See Exhibit 18)

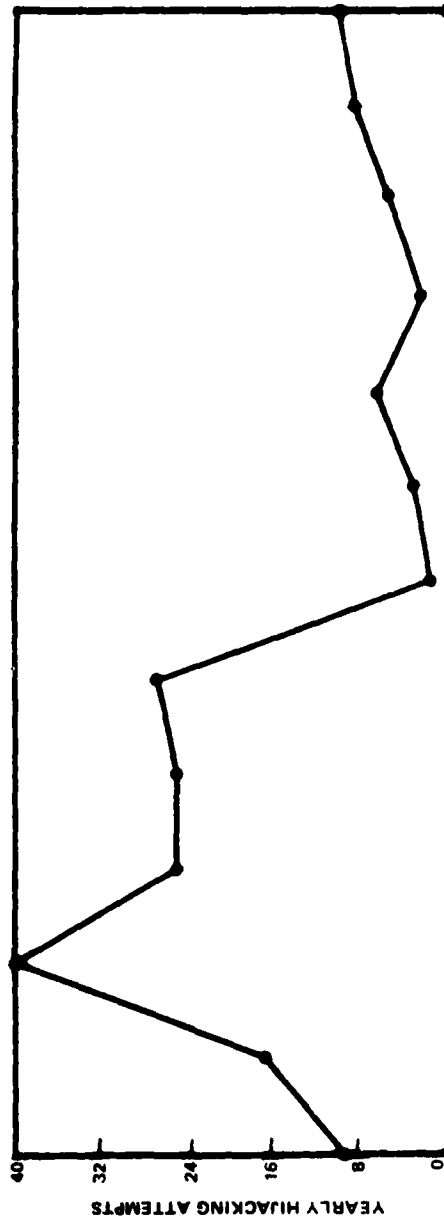
#### XI. OUTLOOK

Attempts to hijack aircraft and sabotage aviation facilities are expected to continue both nationally and worldwide. To reduce the vulnerability of aviation to successful attack by would-be hijackers, saboteurs and terrorists, FAA and the U.S. aviation industry will continue efforts to meet the threats to the safety of air travel and to ensure safe and secure flight with a minimum of inconvenience to air travelers.



Department of Transportation  
Federal Aviation Administration

# HIJACKING ATTEMPTS ON U.S. SCHEDULED AIR CARRIER AIRCRAFT



HIJACKING BY YEAR	1930 - 67	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	TOTALS
TOTAL	9	17	40	25	25	27	1	3	6	2	5	8	11	179
SUCCESSFUL	4	13	33	17	11	8	0	0	0	1	0	0	4	91
INCOMPLETE <sup>2/</sup>	1	1	1	4	8	14	1	1	1	0	3	4	5	44
UNSUCCESSFUL	4	3	6	4	6	5	0	2	5	1	2	4	2	44

As of: 1/1/80

## U.S. AIR CARRIER HIJACKING ATTEMPTS SINCE JULY 1, 1979

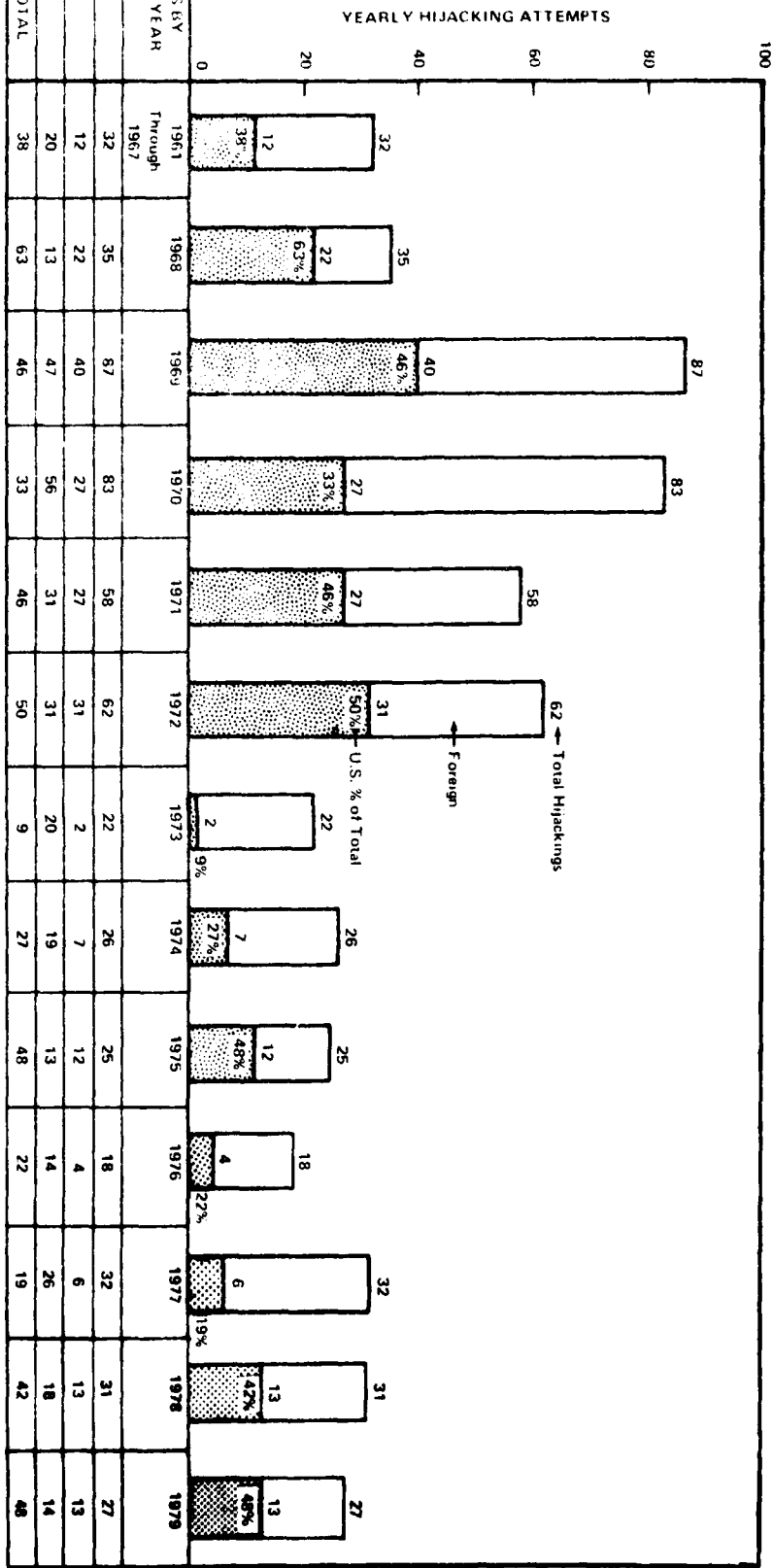
DATE	AIRLINE/FLT AIRCRAFT	NUMBER ABOARD	FLIGHT		HIJACKER DEST/OBJECTIVE	REMARKS
			ORIGIN	DESTINATION		
7/20/79	UA320/B 727	126	Denver, CO	Omaha, NB	Cuba	Incomplete 1 male captured
8/16/79	EA390/B 727	91	Guatemala City	Miami, FL	Cuba	Incomplete 1 male captured
9/27/79	UA729/B 727	120	Portland, OR	Los Angeles, CA	Portland, OR	Successful 1 male surrendered
10/30/79	PS-784/B 727	108	Los Angeles, CA	San Diego, CA	Mexico	Successful 1 male surrendered
11/24/79	AA395/B 727	74	San Antonio, TX	El Paso, TX	Iran	Incomplete 1 male captured

<sup>1/</sup> Includes commercial operations engaging in interstate common carriage covered by Code of Federal Regulations Title 14 Part 121.7

<sup>2/</sup> Hijacking in which hijacker is apprehended/killed during hijacking or a result of "hot pursuit"

Department of Transportation  
Federal Aviation Administration

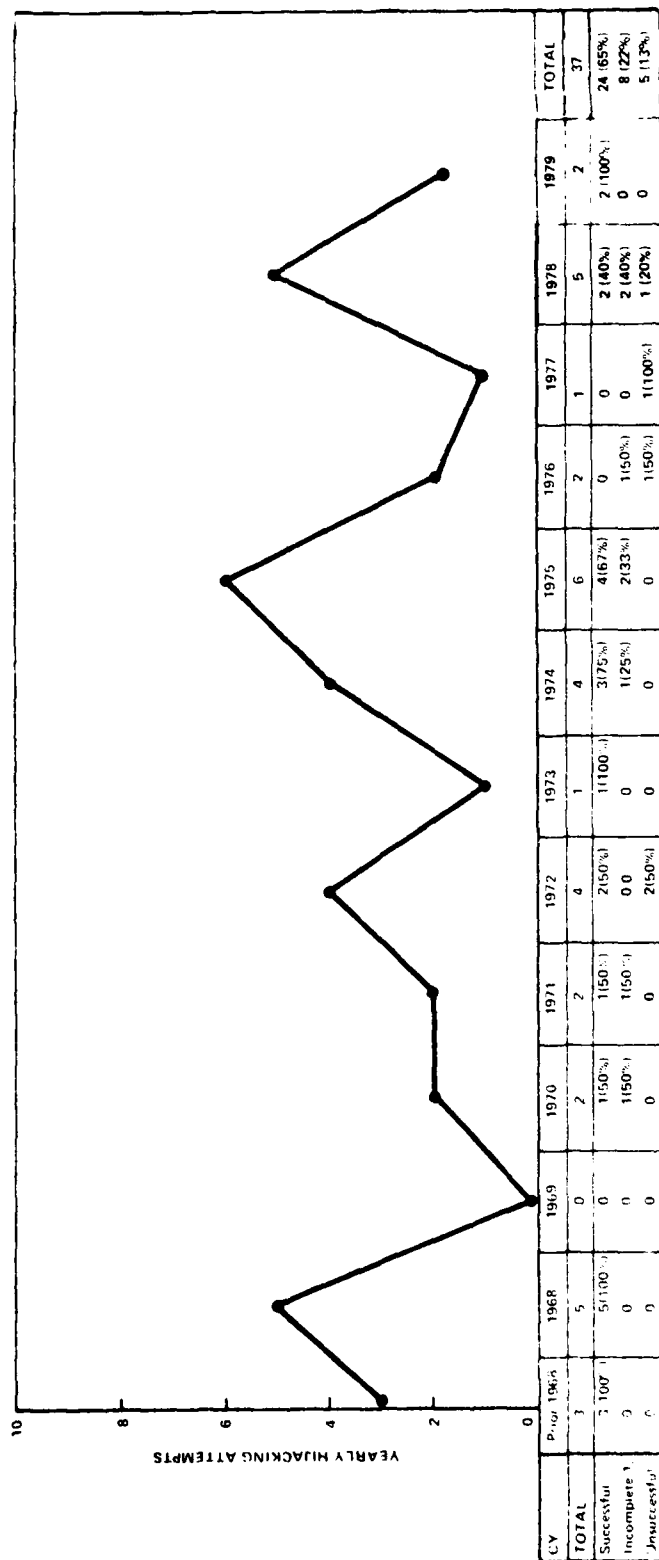
# HIJACKING ATTEMPTS ON U.S. AND FOREIGN AIRCRAFT \*



\* Includes General Aviation

As of: 1/1/80

# HIJACKING ATTEMPTS ON U.S. GENERAL AVIATION AIRCRAFT

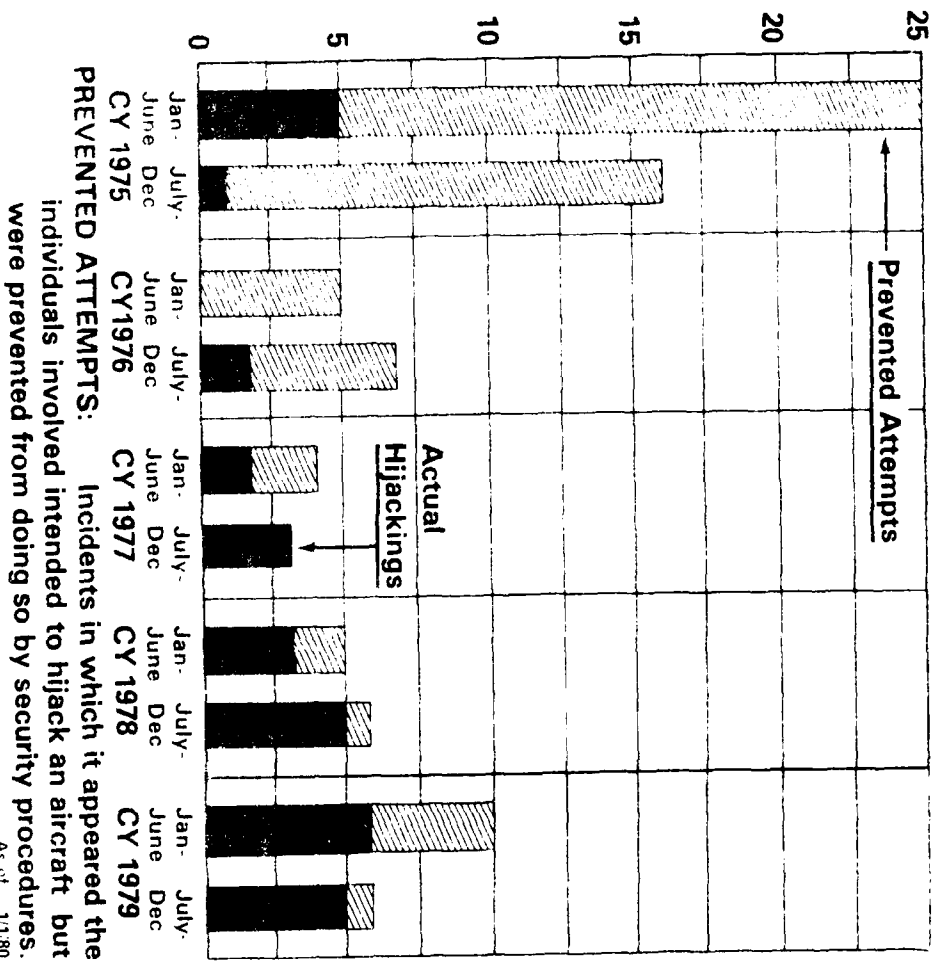


As of: 1/1/80

GENERAL AVIATION HIJACKING ATTEMPTS SINCE JANUARY 1, 1979						
DATE	AIRCRAFT	NUMBER ABOARD	FLIGHT		HIJACKER (S) OBJECTIVE	REMARKS
			ORIGIN	DESTINATION		
10-14-79	Piper 100	3	Lower Lake CA	None	None	Successful 1 female captured
12-12-79	Cessna 172	2	Key West FL	Local lightering	Cuba	Successful 1 male fugitive

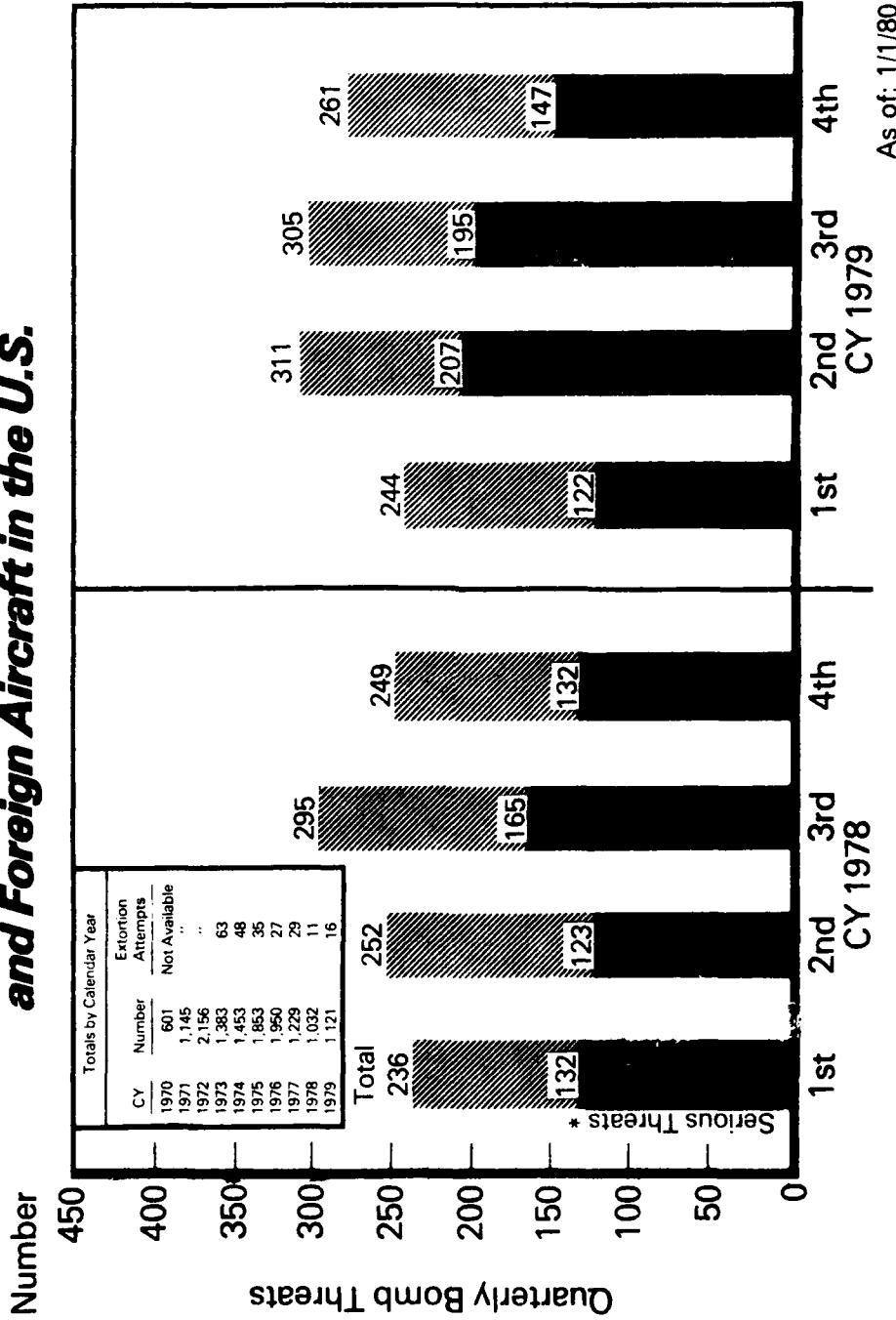
1/ Hijacking in which hijacker is apprehended/killed during hijacking or as a result of "hot pursuit"

# **ACTUAL HIJACKINGS & PREVENTED ATTEMPTS (U.S. AIR CARRIER AIRCRAFT)**



Department of Transportation  
Federal Aviation Administration

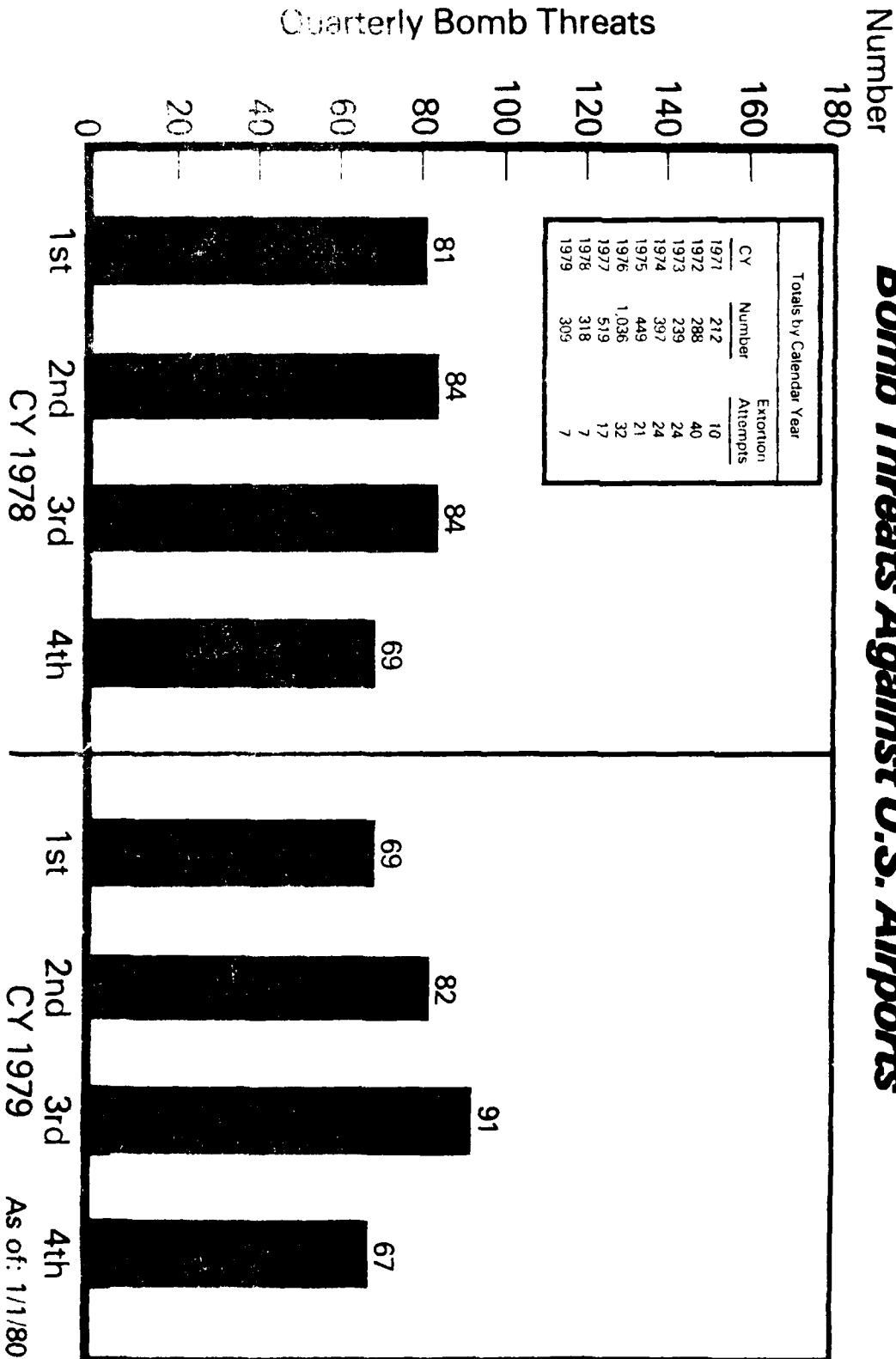
# Bomb Threats Against U.S. Aircraft and Foreign Aircraft in the U.S.



\* A statement is considered a serious threat if one of the following occurs:

1. It is directed against a particular aircraft or flight.
2. It is not possible to immediately determine if it is made in a joking manner.
3. It results in inconvenience to other passengers.
4. It results in a search or otherwise disrupts airline operations.

# Bomb Threats Against U.S. Airports



Department of Transportation  
Federal Aviation Administration

# *Civil Aviation Security The Threat To U.S. Aviation*

	1961-7	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
<u>Hijackings*</u>	12	22	40	27	27	31	2	7	12	4	6	13	13
<u>Explosions:</u>													
Aircraft	2	1	1	2	1	1	2	3	2	2	1	0	1
Airports						2	2	4	4	2	3	3	2
<u>Explosive Devices Found:</u>													
Aircraft					1	2	2	1	1	1	2	0	2
Airports					5	5	3	11	5	3	1	6	6
<u>Bomb Threats To:</u>													
Aircraft			400	601	1145	2156	1383	1453	1853	1950	1229	1032	1121
Airports					212	288	239	387	449	1036	519	318	309

\*Includes Air Carrier and General Aviation Hijackings

As Of: 1/1/80

Department of Transportation  
Federal Aviation Administration

# Worldwide Criminal Incidents Involving Civil Aviation

Year	Deaths	Injuries	Total Incidents	Hijackings (Scheduled Air Carriers)	
				Foreign	U.S.A.
1968 *	2	2	30	13	17
1969 *	35	7	92	47	40
1970	92	32	82	56	25
1971	31	9	73	31	25
1972	159	96	88	31	27
1973	104	75	73	20	1
1974	170	59	62	19	3
1975	88	162	64	13	6
1976	227	200	55	13	2
1977	129	68	69	25	5
1978	81	147	71	17	8
1979	62	80	85	12	11

\* Statistical data prior to 1970 are approximations.

As of: 1/1/80



Department of Transportation  
Federal Aviation Administration

## ***Civil Aviation Security Scope and Effectiveness 1973-1979***

- Over 2.5 Billion Persons Screened
- Almost 4 Billion Pieces of Carry-on Items Inspected
- Over 36 Million Flights
- Over 19,000 Firearms Detected
- Over 7,000 Related Arrests
- None of the 36 U.S. Airline Hijackings During this Period Involved Real Firearms or High Explosives Passing Undetected Through the Screening System
- 80 Hijackings or Related Crimes May Have Been Prevented by Airline and Airport Security Measures

EXHIBIT 9

As Of: 1/1/80

Department of Transportation  
Federal Aviation Administration

# *Civil Aviation Security*

## *Airline Passenger Screening Results*

### *January 1977 -- December 1979*

	1977 Jan-June	1977 July-Dec	1978 Jan-June	1978 July-Dec	1979 Jan-June	1979 July-Dec
<b>Persons Screened (Millions)</b>	243.1	265.7	275.2	304.5	285.7	306.8
<b>Weapons Detected</b>						
Firearms	874	1160	962	1096	990	1171
(1) Handguns	745	985	836	991	902	1060
(2) Long Guns	24	40	34	33	29	26
(3) Other	105	135	92	72	59	85
Explosive/Incendiary Devices	2	3	1	2	3	0
<b>Persons Arrested</b>						
For Carriage of Firearms/Explosives	370	440	404	492	469	591
For Giving False Information	23	21	31	33	21	26
<b>Other Offenses Detected</b>						
Narcotics	156	126	151	99	73	128
Illegal Aliens	474	483	723	605	845	844
Other	151	242	706	69	40	109

Source: Reports Of Passenger Screening Activities At U.S. Airports

EXHIBIT 10

As Of: 1/1/80

## ***Civil Aviation Security Weapon Detection Devices***

<u>Type</u>	<u>Basic Characteristics</u>	<u>Manufacturer</u>	<u>Units</u>
<b>Walk-Thru Active</b>	<b>Creates and Measures Deviations in Own Electric Field. Detects Both Ferrous and Non- Ferrous Metals.</b>	<b>Rens</b>	<b>645</b>
		<b>Infinetics</b>	<b>326</b>
		<b>Metor</b>	<b>77</b>
		<b>Westinghouse</b>	<b>28</b>
		<b>Sperry Rand</b>	<b>11</b>
		<b>Solco</b>	<b>21</b>
		<b>Sentrie</b>	<b>199</b>
		<b>Philips</b>	<b>4</b>
		<b>Total</b>	<b>1311</b>
<b>Hand-Held Active</b>	<b>Comparable To Walk- Thru Active. Limited Effective Range.</b>	<b>Rens</b>	<b>230</b>
		<b>Federal</b>	<b>250</b>
		<b>Solco</b>	<b>720</b>
		<b>Total</b>	<b>1200</b>

**Total -- All Types -- 2511**

**As Of: 1/1/80**

## ***Civil Aviation Security X-Ray Baggage Inspection Systems***

### **Characteristics:**

Small Dose X-Ray, Intensify Image Electron-ically, Display on TV

### **Operating Criteria:**

Meet FDA/BRH and State Health Standards Distinguish 24 Gauge Wire

### **Limitations:**

Dependent on Diligence of Operators, Demands Constant Attention and Ability to Quickly Recognize Dangerous Articles

### **Systems In Use:**

Astrophysics	343
Phillips Electronic Instruments	117
Bendix	112
American Science & Engineering	57
New Security Concepts	34
Dennis & Miller	24
Total:	<u>687</u>

## ***Civil Aviation Security Regulatory Impact***

	<u>U.S.</u>	<u>FOREIGN</u>	<u>TOTAL</u>
Carriers	87*	96**	183
Airports	410	270	680
Aircraft	2,745	—	—
Flights Per Day	14,400	560	14,960
Screening Activity Per Day:			
Persons	1,667,000	98,000	1,765,000
Carry-On Items	1,354,000	73,000	1,427,000

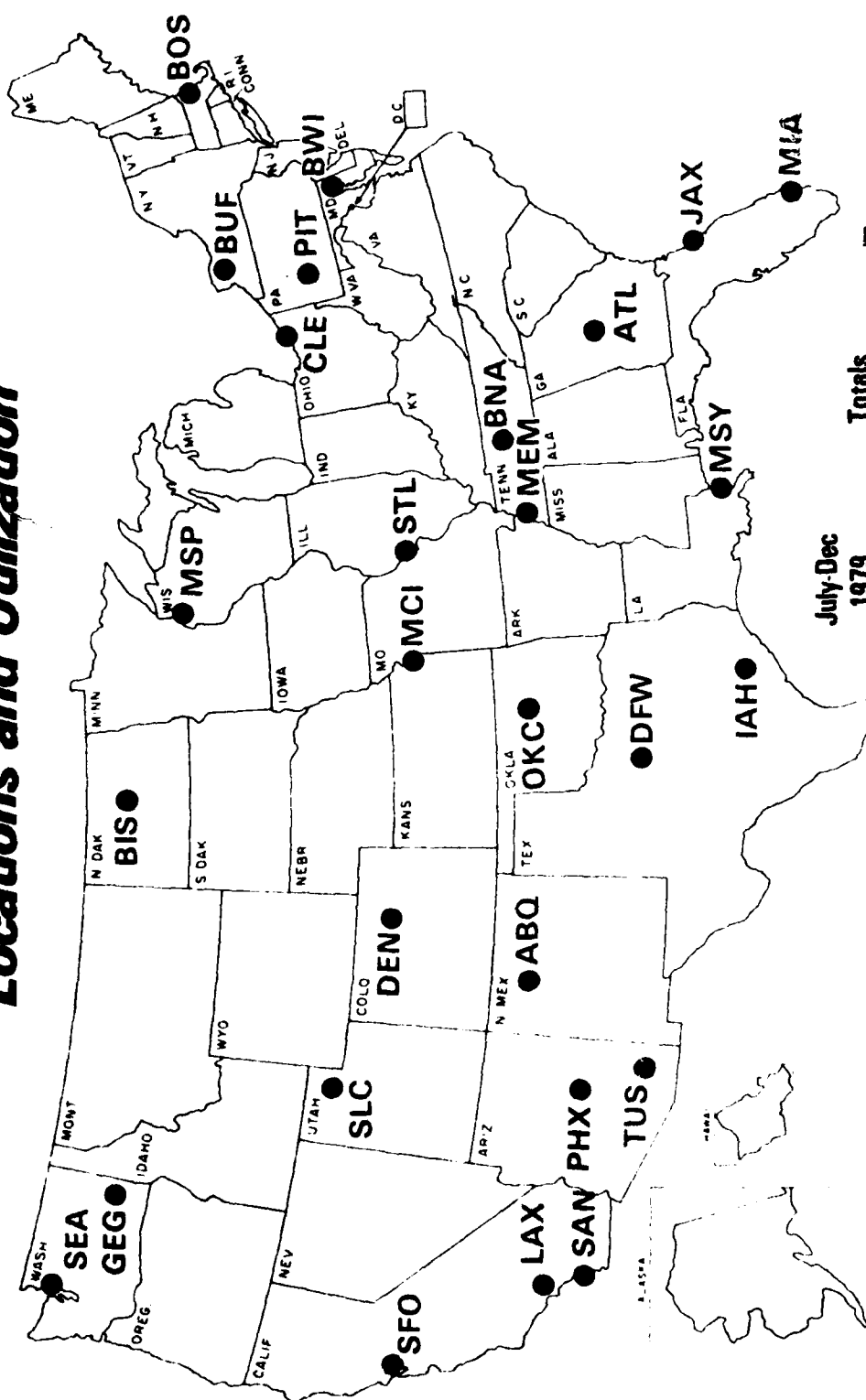
\* Includes 47 Scheduled Air Carriers and 40 Commuter Airlines Which Operate Under Approved Security Programs

\*\* Includes 77 Scheduled and 19 Charter Operators

## ***Civil Aviation Security Basic Policies***

<u>PROGRAM ELEMENT</u>	<u>RESPONSIBILITY</u>	<u>ACTIONS</u>
AIR CARRIERS	SECURE TRAVEL	<ul style="list-style-type: none"><li>• MAINTAIN RESPONSIVE SECURITY PROGRAMS</li><li>• SCREEN PASSENGERS, CARRY-ON ITEMS</li><li>• SECURE BAGGAGE, CARGO PROCEDURES</li><li>• PROTECT AIRCRAFT</li></ul>
AIRPORTS	SECURE OPERATING ENVIRONMENT	<ul style="list-style-type: none"><li>• MAINTAIN RESPONSIVE SECURITY PROGRAMS</li><li>• PROTECT AIR OPERATIONS AREA</li><li>• PROVIDE LAW ENFORCEMENT SUPPORT</li></ul>
FAA	LEADERSHIP	<ul style="list-style-type: none"><li>• IDENTIFY AND ANALYZE THREAT</li><li>• PRESCRIBE SECURITY REQUIREMENTS</li><li>• COORDINATE SECURITY OPERATIONS</li><li>• PROVIDE TECHNICAL ASSISTANCE</li><li>• ENFORCE REGULATIONS</li></ul>
USERS	PROGRAM COSTS	<ul style="list-style-type: none"><li>• SECURITY FUNDED AS OPERATING COST OF SYSTEM</li></ul>

# **FAA Sponsored Explosive Detection K9 Teams** **Locations and Utilization**



	July-Dec 1979	Totals
Aircraft & Airport Searches	348	3956
Explosive Items Detected	1	26
Missions in Local Communities	274	4644
Explosive Items Detected	6	114
Total Explosive Items Detected	7	140

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As Of: 1/1/80

***Civil Aviation Security  
Research and Development  
Checked Baggage Explosive Detection***

**X-RAY ABSORPTION**

Two Units Being Built For Operational Testing  
Delivery Scheduled For March 1980

**THERMAL NEUTRON ACTIVATION**

Construction of Prototype Complete  
Prototype Evaluation February 1980

**NUCLEAR MAGNETIC RESONANCE**

Construction of Prototype Complete  
Prototype Evaluated April 1979  
Analysis in Progress—Further Tests Contemplated

**VAPOR CHARACTERIZATION**

Identification of Unique Vapors of Explosives  
Scheduled For Completion By March 1980

**BIOLOGICAL**

Use of Small Mammals (Gerbils, Rats) To Detect Explosive Vapors  
Test Cages Delivered  
Animals Habituated To Laboratory  
Training to Begin Spring 1980



## ***Civil Aviation Security Foreign Technical Assistance***

<b><u>ACTIONS</u></b>	<b><u>COUNTRIES PARTICIPATING</u></b>
• FAA Technical Assistance Team Visits	28
• Aviation/Law Enforcement Officials Briefings	69
• Training Programs:	
— Aviation Security Course (Students)	71 (305)
— Antihijacking Tactics	27
— Ground Explosive Security	67
— Inflight Explosive Security	91
— Passenger Screening	20
• Analytical Studies Distribution	17

As Of: 1/1/80

## Civil Aviation Security Compliance and Enforcement Actions

	1973	1974	1975	1976	1977	1978	1979
<b>U.S. AIR CARRIERS</b>							
Warnings	—	—	329	270	276	266	283
Letters of Correction	152	124	128	110	109	145	102
Non Enforcement Actions	66	36	63	108	61	65	49
Civil Penalties (Amount)	43 (\$42,850)	58 (\$75,750)	56 (\$45,300)	84 (\$46,800)	43 (\$66,700)	30 (\$23,300)	26 (\$18,075)
Investigations Closed	261	218	576	572	489	506	460
Investigations Pending					61	48	80
<b>FOREIGN AIR CARRIERS</b>							
Warnings		NO Regulation Applicable	0	0	0	0	14
Letters of Correction			0	12	11	11	6
Non Enforcement Actions			3	2	2	3	3
Civil Penalties (Amount)			0	0	0	0	0
Investigations Closed			3	14	13	14	23
Investigations Pending					2	12	15
<b>AIRPORTS</b>							
Warnings Issued	—	—	125	141	137	168	80
Letters of Correction	40	68	83	68	53	65	53
Non Enforcement Actions	11	14	7	18	23	20	12
Civil Penalties (Amount)	1 (\$1,000)	14 (\$6,750)	16 (\$14,450)	19 (\$10,400)	12 (\$3,500)	11 (\$7,500)	19 (\$15,150)
Investigations Closed	52	96	231	246	225	264	164
Investigations Pending					23	29	69
<b>INDIVIDUALS</b>							
Administrative Corrections		NO Regulation Applicable	1	27	81	68	617
Non Enforcement Actions			2	41	24	18	57
Civil Penalties (Amount)			1 (\$25)	1 (\$350)	4 (\$2050)	9 (\$1,925)	70 (\$11,300)
Investigations Closed			4	69	109	95	774
Investigations Pending					14	45	392

As Of: 1/1/80

DATE  
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